

**REMARKS**

**CLAIM AMENDMENTS**

Claim 1 has been amended to avoid the possibility of misinterpretation of the claimed subject matter based upon the conception that the claims somehow recite a statement of intended use as opposed to structural features. Applicant believes that claim 1 in its prior version sufficiently defined structural features as opposed to statements of intended use, but nevertheless it is currently proposed to amend claim 1 to avoid any such possible interpretation. Accordingly, claim 1 has been amended to remove the term “enabling” and to replace same with descriptive language that avoids any misunderstanding as to the structural nature of the feature substances or the first coding.

Applicant submits that the phrase “feature substances having properties that enable check of the authenticity of the value document”, when considered as a whole, defines physical properties of the feature substances that would be apparent to a person of ordinary skill in the art in view of the written description and further in view of general knowledge of persons skilled in the art of using codes for authenticating value documents based on the use of feature substances.

Likewise, Applicant submits that the phrase “said first coding also configured to enable value recognition of the document”, when considered as a whole, defines the first coding in a manner that enables a person of ordinary skill in the art to understand the physical nature of the coding based upon the written description as well as the general knowledge of persons skilled in the art of using codes for recognizing value of value documents.

In the absence of evidence that a person of ordinary skill in the art would consider the phrases to merely describe an intended use of the features, Applicant submits that the language characterizing the different feature substances and the first coding positively defines the feature substances and the first coding when a comparison is made between the invention recited in the claim and the related prior art.

The amendments to claims 4, 14, 22 and 23 are intended to correct inadvertent errors that were recently observed and to refine some of the claim language reciting method aspects of the invention so that the method is better described in terms of method steps.

Accordingly, the basis for the amendments will be self-evident from the language of the prior versions of the claims.

**CLAIM REJECTIONS – 35 U.S.C. §103(a)****The Substance of Claim 1**

By way of review, the invention recited in claim 1 is a value document comprising a substrate having two different feature substances having properties that enable checking of the authenticity of the value document. The written description is clear regarding the advantage of the two different feature substances that enable checking of the authenticity of the value document. Namely, two different user groups may check the authenticity of the document using non-overlapping combinations of the feature substances based on high security and low security requirements (specification, pages 9, 10).

Claim 1 recited that the first feature substance is incorporated into and distributed uniformly throughout the volume and substance of the substrate of the value document.

This element of claim 1, as clearly described in the specification, requires the first feature substance to be distributed uniformly throughout the mass and volume of the substrate with random distribution. In the examples given in the specification, the feature substance preferably is added to the paper stock before it is formed into sheets.

Accordingly, it is incorrect on the part of the Examiner to equate a feature substance that is incorporated into an distributed uniformly throughout the volume and substance of the substrate with a sheet of substrate laminated to other sheets of substrates. A substance that is distributed uniformly throughout the volume and substance of a substrate must be incorporated inside the thickness or body of the substrate material itself and not merely incorporated in a separate sheet constituting a single layer of a laminated assembly.

Claim 1 recites that the second feature substance is formed by an luminescent substance that is provided on the value document substrate in the form of a first coding that is configured to enable value recognition of the document. Thus, the second feature substance permits value recognition by the use of a first coding that is placed on the value document as distinguished from distributed uniformly throughout the volume and substance of the substrate of the value document. In a preferred embodiment, the second feature substance is printed on the value document substrate and may be in the form of a bar code (paragraph [0021]).

Finally, claim 1 recites that the first feature substance that is distributed uniformly throughout the volume and substance of the substrate comprises a mixture of luminescent substances having a complex spectral distribution that provides by its spectral characteristics

a second coding in accordance with the form of the emission and/or excitation spectra of the mixture.

In summary, the invention as defined in claim 1 comprises first and second feature substances, the first feature substance incorporated uniformly throughout the volume and substance of the body of the substrate of the value document and providing, by its luminescent properties, a complex spectral distribution that provides a second coding in the document, and a second feature substance also formed by a luminescent substance provided on the value document substrate in the form of a first coding.

### **PRIOR ART RELIED ON AS EVIDENCE OF OBVIOUSNESS**

The examiner relies primarily on the basic reference Soules (US 5259907) as evidence of obviousness of the subject matter recited in claim 1, and further relies on the secondary references Hoppe (US 4407525); Kaule (US 4451530) and Weitzen (US 4455039) as evidence that it would have been obvious to a person of ordinary skill in the art to modify Soules to the extent that it lacks elements of claim 1, in a manner taught by the secondary references to arrive at the invention recited in claim 1 in an obvious manner.

The basic reference Soules, with reference to the embodiment of Figure 7 referenced by the Examiner, discloses a playing card that is invisibly coded so that it can be read electronically via the use of coding that is invisible to the human eye but nevertheless observable electrooptically through the use of indicia such as bar codes that are imprinted on an inner layer of a multi-sheet laminate that is bonded together to form the playing card.

The indicia may be printed on the backside of a front layer of the laminate or may be printed on an inner sheet layer constituting the laminate of the playing card, as shown in Figure 7.

In figure 7, the inner laminate sheet is made of aluminum and a bar code 76 is imprinted on one side using carbon on the aluminum sheet. A laminate is formed with the inner sheet so that the bar code 76 may be faintly visible through the top laminate sheet, particularly in view of the fact that the rear face of the top sheet is covered with a finely divided white powder that scatters visible light. This permits the face of the card to be highly reflective and the bar code to be effectively hidden because light from the bar code will not be transmitted through the front face of the card (column 13, lines 5-9).

It is clear without question that the feature substance of Soules (the printed carbon bar code on the intermediate aluminum layer) is not distributed uniformly throughout the volume

and substance of the body of the substrate *i.e.* either the inner laminate layer 72 or the card body considered as a whole.

It is also clear without question that the missing first feature substance can not provide a coding by the form of the emission and/or excitation spectra of the mixture. Indeed, as clearly described in the specification of Soules, the light from the bar code is not transmitted through the front face of the card and therefore any transmittal of light through the front face of the card would defeat the purpose of the Soules playing card.

It is also plainly clear without question that Soules fails to reveal a second feature substance in combination with the first feature substance that is provided on the value document in a form of a coding that enables value recognition of the document. In Soules, all of the coding is provided in an interior of the layer document, and not on the document itself.

It is also clearly evident that Soules fails to show, teach or suggest the combination of a first and second feature substance having as an intended objective the ability to determine both the authenticity and the value of the playing card.

Hoppe only discloses forming coding by color printing on different layers of a laminated identification card having authenticity features that may be tested in incident and transmitted light. The coding is provided by printing with colors over large internal areas of the laminate including areas that are partially overlapping with each other.

The fact that the colors must be printed on substrates, clearly and without questions indicates that the color layers can not be incorporated into and distributed uniformly throughout the volume and substance of the substrate of the value document. A film such as a printed color layer and its associated substrate must exist as a discrete layer having a physical thickness whether or not it is printed on the surface of a document or embedded in a laminate that includes the color layer.

There is no disclosure in Hoppe of a feature substance that is incorporated into and distributed uniformly throughout the volume and substance of the substrate of the laminated identification card.

Hoppe contains no disclosure that the color layers constituting the coating within the identification card lamination is a luminescent material.

Kaule '530 discloses a security paper having authenticity features in the form of luminescent substances wherein the luminophore of the luminescent substances has an emissions spectrum that is changed by the technology used in the emission or excitation

spectra. Kaule fails to provide any teaching of a mixture of luminescent substances being used to form a coding formed by the spectral characteristics of the mixture.

In accordance with Kaule, a luminophore is combined with an absorbing material which absorbs at least in the region of visible emission of the luminophore to thereby change the excitation spectrum of the luminophore.

Kaule does not disclose a mixture of luminescent substances having a complex spectral distribution that provides by its spectral characteristics a coding by the form of the admission and/or excitation spectra of the mixture.

Weitzen discloses a single feature substance used to encode a security document. The feature substance is applied as a coating that includes particles driving into the surface of a substrate while leaving the encoded substrate free of detectable physical characteristic. The coating used to define the code on the document may be electroluminescent. It is clearly evident that Weitzen discloses a single coding provided on a document substrate wherein the feature substance constituting the coding may be a luminescent material. The feature substance is deposited on the surface of the substrate, preferably by cathode sputtering that drives particles of the material toward the surface of the substrate. The single code that is provided on the substrate may serve as an authentication and a value identifier.

While Figure 3 discloses an alternate embodiment wherein the characteristic coding is applied over a printing, nevertheless only a single feature coding is used.

Accordingly, there can be no question but that Weitzen merely discloses a single electroluminescent coding material on a value document wherein the coding may be formed by an electroluminescent material.

### **THE EXAMINER'S REJECTION**

The Examiner adopts the position that the laminated playing card of Soules with its distinct laminate layer having a bar code imprinted thereon could somehow be modified so that the bar code feature substance could be distributed uniformly throughout the volume and substance of the card substrate "in accordance with the teachings of Hoppe."

As noted above, Hoppe fails to show or teach any aspect of distributing a feature substance uniformly throughout the volume and substance of a substrate. Accordingly, Applicant submits that the Examiner has failed to provide evidence of obviousness of the claim feature of a first feature substance incorporated into and distributed uniformly throughout the volume and substance of the substrate of the value document on the basis of

the teachings of Hoppe. There is simply no teaching in Hoppe of such a feature and the Examiner's attempt to characterize Hoppe as containing such feature is without technical or legal foundation.

The Examiner, recognizing that Soules fails to teach that the first feature substance is a luminescent material having a complex spectral distribution having spectral characteristics that provide a second coding, attempts to provide evidence of obviousness of providing such feature in the playing card of Soules on the basis of teachings of Weitzen. As noted above, Weitzen fails to show, teach or remotely suggest the use of a first and second feature substance enabling checking of the authenticity of a value document, wherein the first feature substance is incorporated into and distributed uniformly throughout the volume and substance of the substrate of the value document, and further wherein the first feature substance comprises a mixture of luminescent substances having a complex spectral distribution that provides by their spectral characteristics a second coding, all combination with a second feature substance providing a first coding on a value document.

Applicant submits that at most, Weitzen would provide only a teaching of applying a single feature substance on the surface of a value document in substitution for the bar code embedded in the playing card of Soules. Even such a modification of Soules would not be practical in view of the fact that bar code embedded in the Soules playing card is intended not to be visible, but only observable using special optical apparatus through a front face of the playing card. The Weitzen coding, on the other hand, is placed on the value document for observation by special equipment.

The Examiner concludes that it would have been obvious to a person of ordinary skill in the art to apply the Hoppe "uniformed distribution teachings" to the Soules intermediate layer, disposing said element throughout the substrate in order to permit the inclusion of a security feature on both the front and back sides of the substrate layer, as taught by Hoppe.

The Examiner's conclusion is technically and legally deficient in that Hoppe does not disclose any uniform distribution of a feature substance throughout the volume and substance of a substrate of a value document to form a first feature substance, wherein the first feature substance comprises a mixture of luminescent substances having a spectral distribution providing by its spectral characteristics a second coding within the value document, in combination with a second feature substance that provides a first coding on the value document. At most, Hoppe would provide a teaching to a person of ordinary skill in the art that the playing card of Soules could incorporate printed color layers within the laminated

structure of the playing card to provide a coding enabling identification of the playing card. Such modification of Soules, of course, would not constitute a first feature substance incorporated into and distributed uniformly throughout the volume and substance of the playing card where the feature substance constitutes a mixture of luminescent substances that provide a second coding in or on the playing card.

Accordingly, the conclusion of the Examiner is without technical and legal foundation.

The Examiner also concludes that it would have been obvious to a person of ordinary skill in the art to utilize the excitation/emission spectra system of Kaule '530 in the playing card of Soules on the intermediate layer. Motivation attributed to the person of ordinary skill in the art by the Examiner to modify Soules thusly is that the use of the Kaule '530 excitation/emission spectra system would increase the number of luminescent features which are suitable for automatic authenticity testing and which can be differentiated from one another.

Applicant submits that the Examiner's conclusion in this regard is without technical and legal foundation, since the only result that could be obtained by modifying Soules in accordance with the teachings of Kaule would be to change the carbon bar code 76 in Soules to a luminescent material with an absorbing substance to modify the emission of the luminophore of the luminescent material. Nothing more could be attributed to the modification of Soules in accordance with the teachings of Kaule and it remains an open question as to whether or not a person of ordinary skill would be motivated to make such a modification of Soules in the first place. As noted previously, the carbon bar code of Soules is intended to be viewed through the use of an electrophotical device that can view the bar code through the front face of the playing card despite the fact that the bar code is not normally visible through the top layer of the playing card.

The person of ordinary skill in the art would not be motivated to change the carbon bar code of Soules into a luminescent material wherein the emission or excitation spectra is modified in view of the fact that the luminescent bar code would be buried within a lamination layer of the playing card, and not readily observable on the surface of the playing card.

The Examiner concludes that it would have been obvious to a person of ordinary skill in the art to place the Weitzen coding upon the Soules value document as desired during its production, apparently in order to make the document more difficult to counterfeit.

As understood by Applicant, the Examiner suggests that a second coding could be placed on the surface of a playing card wherein such second coding would be formed of luminescent material.

Even assuming for the sake of argument that an electroluminescent coding could be placed on the surface of the playing card of Soules in combination with the carbon bar code laminate layer bonded to the interior of the playing card, there still would be lacking in such combination the elements of claim 1 including a first feature substance incorporate into and distributed uniformly throughout the volume and substance of the substrate, wherein the luminescent substrate has a complex spectral distribution that by its spectral characteristics forms a second coding in combination with a second feature substance formed of a luminescent substance on the value document substrate in the form of a first coding.

As noted above, none of the prior art relied on by the Examiner provides any teaching of the elements recited in claim 1, considered *as a whole*.

In view of the clear lack of evidence of obviousness, including evidence of motivation on the part of a person skilled in the art to modify the basic Soules playing card, withdrawal of rejection of claim 1 is appropriate and the same is respectfully requested.

Claims 3-7 and 9-24 which are dependent directly or indirectly from claim 1, are likewise patentable for the same reasons as expressed above with regard to the patentability of claim 1. In addition, the dependent claims recite elements that further distinguish the subject matter of each claim over the teachings of the cited prior art.

Claims 3 and 4 recite a third feature substance that is different from the first and second feature substances provided on the value document (claim 3) wherein the third feature substance is formed at least by one of a luminescent substance and a mixture of luminescent substances (claim 4).

The prior art fails entirely to disclose first second and third feature substances having the properties and characteristics recited in claims 1, 3 and 4.

Accordingly, withdrawal of the rejection of claims 3 and 4 is appropriate and the same is respectfully requested.

Claim 21 in particular recites a method for checking or processing a value document having the features of claim 1 using the steps (1) checking the authenticity and value of the document using a coding obtained by at least one spectral characteristic property in the form of the emission/excitation spectra of either or both first and second feature substances; and



(2) using the first coding formed by the luminescent substance of the second feature substance for carrying value recognition of the value document.

The prior art is entirely devoid of any teaching of such method and therefore withdrawal of the rejection of claim 21 is appropriate and is requested.

Claims 22, 23 and 24 recite method steps whereby the first and second feature substances may be utilized by different user groups at different levels of security for checking authenticity and value of a value document. The prior art is entire devoid of any teaching whatsoever of the method steps recited in claims 22, 23 and 24, particular in view of the fact that the prior art fails to provide any teaching of a value document having the feature substances recited in claim 1. Accordingly, withdrawal of the rejection claims 22, 23 and 24 is appropriate and is requested.

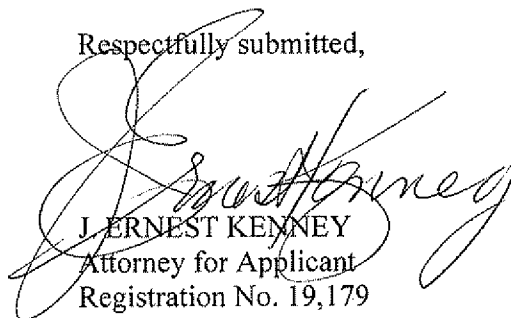
Aforegoing remarks with regard to claims 22, 23 and 24 apply likewise with regard to claims 25, 26 and 27 which depend from claim 24. Withdrawal of the rejections of claims 25-27 is therefore appropriate is requested.

**CONCLUDING REMARKS**

Applicant submits that the rejections of claims 1-3, 7, 9-30 and 32-34 are legally improper in view of the absence of objective evidence of obviousness. Accordingly, Applicant submits that the application is now in condition for allowance and requests passage of the application to issue.

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